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AUTHOR Mansfield, Phyllis; And Others
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ABSTRACT

Primary care physicians in Pennsylvania were asked to give their attitudes and preferences regarding continuing medical education (CME) in an effort to expand and develop physician-oriented CME programs for the Hershey Continuing Education department at Penn State. A 32-item questionnaire was mailed to 952 primary care physicians practicing in Pennsylvania as of May, 1979. The 254 responses constituted a return rate of 26 percent. Less than one fourth of the respondents were opposed to mandatory CME for any purpose, while CME as a requirement for Pennsylvania Medical Society membership and for specialty society membership was favored by at least half of the respondents. Mandatory CME for other purposes, such as malpractice insurance, was considered desirable by between one third and one half of the respondents. Generally, family practitioners were more favorable than other specialists towards mandatory CME. Three fourths of the respondents identified "time away from practice" as a major obstacle to CME participation, while direct costs and availability were each identified as major obstacles by at least half of the respondents. The study recommends that CME programs should be short (one day or less), close to home, and held on days when physicians are not normally working (such as Saturday or Sunday). There was also a perceived need to begin developing CME programs on the cardiovascular and endocrine body systems. Appendices include a bibliography and a copy of the survey questionnaire. (DC)

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Attitudes and Preferences of Pennsylvania Primary Care Physicians Regarding Continuing Medical Education

Phyllis K. Mansfield
Donna S. Queeney
Johny van Nieuwkerk
A. Douglas Chervenak
Carl A. Lindsay

Planning Studies
and
The Milton S. Hershey Medical Center

Continuing Education

The Pennsylvania State University

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INTRODUCTION

Regulations regarding continuing medical education (CME) vary from state to state. In Pennsylvania CME is not mandatory for licensure of physicians, but indirectly it is required (Queeney and Manz, 1979). Physicians must have malpractice insurance if they are to be licensed, and CME is a requirement for that insurance. Since January, 1978, all companies writing medical malpractice policies in Pennsylvania must require 150 hours of CME. This requirement came into being in regulations issued by the Pennsylvania Insurance Department. Evidence of continuing education is part of the Insurance Department's mandate that risk management (to aid reduction of malpractice incidents) be undertaken by insurance companies.

CME also became a requirement for membership in the Pennsylvania Medical Society in July, 1972. Physicians had three years to prepare to meet the requirement for membership, and this time period was further extended for six months. Thus by December 31, 1975, Pennsylvania Medical Society members were required to have had 150 hours of CME to remain a member in good standing.

Initial planning for this study began in 1973, soon after the pertinent legislation was passed. Early discussions between representatives of Planning Studies in Continuing Education and The Pennsylvania State University College of Medicine at The Milton S. Hershey Medical Center revolved around the question of whether or not a formal CME needs assessment study should be undertaken and if so, what the objectives of the study should be. Interest in and justification

for such a formal study waxed and waned for the next several years due primarily to staff turnover at both organizations. Meanwhile, the continuing medical education program at Hershey grew, with enrollments increasing from 3,281 in 1974-75, to 8,381 in 1978-79. Also, the emphasis for a formal study shifted from one with a primary emphasis on educational needs assessment to a multipurpose study with a minor emphasis on educational needs. Finally in the fall of 1978, a new research project team was developed with representatives from the Continuing Education Department and College of Medicine at The Milton S. Hershey Medical Center, and Planning Studies. This team then secured the participation and support of The Pennsylvania Medical Society in early 1979, and planned and conducted the present study.*

Background

In undertaking a formal needs assessment and marketing study of a particular professional group, the processes of planning, developing, conducting, and evaluating continuing professional education programs can be viewed in a number of different ways. Regardless of the approach taken for the needs assessment/program development process, however, the basic decisions which must be made remain the same: when and how will specific educational programs be delivered to what target groups, and how will their impact be assessed? These decisions can be made within the framework of a general needs assessment/program development model (Lindsay and Dubin, 1976).

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* The Pennsylvania Medical Society's participation in and financial support of this study are gratefully acknowledged.

In actual practice, of course, most continuing professional education programs are developed and conducted without explicitly attending to all of the elements in a formal model. In fact, approaches to the needs assessment/program development process can be categorized into two basic types: informal and formal. The informal is an ongoing approach which relies on the existence of an administrative mechanism that has the resources and staff to identify and serve educational program clientele within specific geographic areas. It is this type of needs assessment process that has been employed by Continuing Education at The Pennsylvania State University, where the key to the informal approach is the area representative, or continuing education field agent who maintains a close familiarity with the business, educational, and service groups in his/her area. By maintaining close contact between the community and the resources of the University, the agent processes the educational needs of different target groups and provides information for developing appropriate programs for meeting these needs. In this manner the field agent implicitly follows the paradigm of a general needs assessment/program development process.

Occasionally, however, there is justification for supplementing the informal process of needs assessment/program development with a more formal or research-based approach. The notion of supplementing the informal approach with a formal approach is introduced advisedly because the informal has been used successfully by The Pennsylvania State University for many years and will continue to be the primary approach. A formal approach is typically used when it is desirable or necessary, for planning purposes, to collect information about needs, attitudes,

delivery preferences, etc. directly from the target group in a systematic fashion. Use of the formal approach is also predicated on the availability of resources that can be expended in a cost effective manner to collect the information. The present study, which reports on a continuing medical education survey of Pennsylvania's primary care physicians, is an example of how a formal approach to the needs assessment/program development process can supplement the ongoing or informal process.

Objectives of the Study

The primary objective of this study was to provide information to assist the Hershey Continuing Education Department in expanding their development and provision of physician-oriented CME programs. A secondary objective was to provide both the Hershey Continuing Education Department and the Pennsylvania Medical Society with information on Pennsylvania physicians' attitudes toward CME. The survey form was designed to meet these objectives by providing data on physicians' preferences, in the belief that this type of knowledge would improve program planning capabilities.

Involving physician-learners in the planning and development of their CME programs in this manner is also seen as a means of bridging the gap that has been perceived to exist between physician-learners and planners of CME programs. Educational research indicates that if effective learning is to take place, learners must participate actively. Thus the survey offered physicians an opportunity to provide input regarding their preferences for various program topics, estimates of the

effectiveness of various methods of program presentations, and perceived usefulness of various CME activities.

There is controversy over the most valid way of measuring physician need for learning. Some will argue that individuals have difficulty recognizing their professional needs. They call for the use of complex needs assessment tools, such as peer review or practice audit. However, in terms of cost and available resources, such complex methods were beyond the scope of this study. Instead, this survey included a question simply asking physicians to identify their perceived degree of need for up to date information on a variety of topics pertaining to body systems and office management. If nothing more, responses to this question will be useful to planners as indicators of what is currently of interest to physicians.

Finally, this study sought to learn the attitudes of Pennsylvania physicians toward mandatory CME. With many states moving toward a CME requirement for relicensure, and with growing criticism over the effectiveness of CME, there is increased interest in how physicians view it. Physicians were asked their attitudes toward CME as a requirement for a variety of professional memberships, as well as for malpractice insurance. They were also asked to indicate the degree of influence of CME on their level of knowledge and professional competence.

Procedure

In planning the data collection, the research team considered several data collection alternatives, including a mail survey and

personal or telephone interviews. On the basis of cost and sampling considerations, a mail survey was selected as the optimum method. After extensive discussion of the survey content, the team developed a thirty-two item questionnaire that was designed to be both brief and interesting to answer. The questionnaire addressed three major areas: physicians' perceived attitudes toward mandatory CME, their perceived needs for additional information in sixteen topical areas, and their preferences for the delivery of CME.

The target sample for the study was restricted to primary care physicians, defined as those engaged in general practice, family practice, internal medicine, obstetrics/gynecology, or pediatrics. Study participants were identified by randomly selecting a 10 percent sample of the approximately 9,000 primary care physicians, including both M.D.s and D.O.s, who are a part of the ongoing address file of Pennsylvania physicians maintained by the Continuing Education Department at The Milton S. Hershey Medical Center.

A cover letter and the questionnaire (Appendix) were mailed to the sample of 952 physicians in May, 1979. The cover letter, signed jointly by representatives of the Pennsylvania Medical Society and The Pennsylvania State University College of Medicine, requested physicians' participation and guaranteed their anonymity. One reminder, a postcard, was mailed to the entire sample three weeks later. By the cut off date of June 30, 254 questionnaires had been received, yielding a return rate of 26 percent.

RELATED STUDIES

During a nationwide conference sponsored by the Alliance for Continuing Medical Education in February, 1978, Richards (1978a) described CME as a "vast . . . industry" producing educational programs needed to fulfill ever-expanding CME requirements. The growth of this industry is the result of a sharp increase in mandatory CME as a condition for national and state medical society membership, specialty society membership, hospital staff privileges, and licensure. A 1978 report by the American Medical Association (AMA) shows that thirty-five states now require CME for either state medical society membership or relicensure (Smith, 1978).

Richards, who is associate director for continuing education at the American College of Cardiology and author of Continuing Medical Education: Perspectives, Problems, Prognosis (1978c), went on to cite several broad trends which have influenced this move toward mandatory CME. These are: a need to assure the public of the ongoing competence of licensed professionals, based on belief in the "knowledge gap" theory; a movement toward lifelong education; a concern about the malpractice problem; and a demand for increased public accountability by the medical profession (Richards, 1978a). The CME credit system, quantifiable, visible, and understandable, provides the profession with a method of assuring the public of its willingness to deal with practitioners' problem of keeping up to date and is preferable to other methods (Alliance for Continuing Medical Education, 1978).

One result of expanded CME requirements is a proliferation of traditional CME courses. For example, the number of such courses reported in the annual supplement to the Journal of the American Medical Association (JAMA) alone has grown from 1,146 in 1962-63, to 8,881 in 1978-79 (Richards, 1978b; Johnson, 1979). While only major programs are included in the JAMA supplement, these figures are indicative of the extent of increase in CME programming.

While the motives behind the CME "stampede" (Frederick, 1977) generally have been altruistic, based on efforts to insure physician competence and improve patient care, there is growing controversy over the effectiveness of CME in achieving these goals (Alliance for Continuing Medical Education, 1978). One criticism is that traditional CME is too teacher oriented to be effective (Alliance for Continuing Medical Education, 1978; Stern, 1976; Brown and Uhl, 1970; Libby, Winswig, and Kirk, 1975; Miller, 1967). Data from educational research suggest that adult learning succeeds only to the degree that the learners actively participate in all phases of their learning, including defining their needs and planning and evaluating their programs.

The most serious criticism of CME is that there is little evidence it is fulfilling its goals of improved physician performance or patient (Libby et al., 1975; Richards, 1978c; Stross and Harlan, 1978; Alliance for Continuing Medical Education, 1978; Bertram and Brooks-Bertram, 1977). Good assessment studies are rarely a component of CME programs, and measures of satisfaction with a program are often confused with measures of effectiveness. Bertram and Brooks-Bertram, in a

comprehensive review of the literature on CME program evaluation, conclude that in terms of cost benefit, "a significant and consistent documentation of the existence of benefits is absent" (1977, p. 344).

Despite the serious criticisms launched against the CME enterprise, there is evidence of growing acceptance of mandatory CME and even a prediction of expansion by one of its spokespersons. In a nationwide survey of 723 physicians, Peck (1977) found 40 percent responding favorably to periodic relicensure exams (1977). Stross and Harlan's survey of Michigan physicians found three fourths of them believe that mandatory CME is worthwhile (1968).

Richards compares two surveys of attitudes towards relicensure. In 1971, only 37 percent of the physicians polled by Medical Opinion favored the notion of relicensure; by 1976, nearly two thirds of respondents in an AMA poll favored a CME requirement as a prerequisite to licensure renewal (1978c).

Richards, in the conclusion of his current book about CME, predicts that within five years CME will be required for medical relicensure in most states, "despite the fact that such a process is expensive . . . and that its desired linkage with improvements in physician performance is undemonstrated. . . . Its major value is that it is possible to accomplish. . . ." (1978, p. 173).

RESULTS

The questionnaire was designed to provide information that could be used to supplement the ongoing activities of the Hershey Continuing Education Department. Physicians' attitudes toward mandatory CME, their needs and perceptions of CME programs, and their preferences for delivery of CME were all explored in an effort to obtain information of optimum usefulness.

Nearly all (91 percent) of the 254 survey respondents belonged to local, state, and/or national professional associations for physicians. Sixty-seven percent of them belonged to specialty societies. Sixty-four percent of the physicians surveyed were part of a group practice including two or more physicians.

A profile of the respondents is shown in Table 1. This information indicates that there was a somewhat older responding population: fully one third of the respondents were over age sixty, and 60 percent were over age fifty. Far more respondents were working in general practice, family practice, and internal medicine than in the areas of pediatrics and obstetrics/gynecology. Almost one third of those sampled practiced medicine in small towns, another third had practices in urban areas, and one fourth were engaged in suburban practices, while only one tenth were physicians in rural areas.

Attitudes Toward CME

The attitudes of physicians toward mandatory CME are shown in Table

2. Less than one fourth of the respondents were opposed to mandatory CME for any purpose, while CME as a requirement for Pennsylvania Medical Society membership and for specialty society membership was favored by at least half of the respondents. Mandatory CME for other purposes, such as malpractice insurance, was considered desirable by between one third and one half of the respondents.

When asked if they would continue to participate in CME activities if such participation were not mandatory, 83 percent of the respondents indicated that they would participate at about their current level, 16 percent would possibly participate but at a reduced level, and 1 percent probably would not participate.

Table 1

Profile of Respondents by Type of Practice, Age, and Location of Practice

Type of Practice	Percent	Age of Respondents	Percent	Location of Practice	Percent
General practice	28	21-30	1	Urban area	33
Family practice	30	31-40	14	Suburban area	25
OB-GYN	11	41-50	21	Small town	32
Internal medicine	22	51-60	31	Rural area	10
Pediatrics	8	Over 60	33		
Other	1				

Table 2

Attitudes Toward Mandatory CME

Statement	*Percent of Respondents Agreeing
CME should continue to be a requirement for Pennsylvania Medical Society membership.	59
CME should be required for national association membership.	36
CME should be required for specialty society membership.	50
CME should be required for relicensure in Pennsylvania.	45
CME should be required for malpractice insurance.	36
CME should be required for appointment to a hospital medical staff.	46
CME should not be required.	24

*Respondents were instructed to select all statements that reflected their attitudes.

Table 3 shows physicians' perceptions of the influence that CME has on their practice of medicine. Over two thirds of the respondents felt that CME has made some difference in their practice habits, but over three fourths also believed, at least to some extent, that they could keep up to date professionally without formal CME. Ten percent of the respondents agreed strongly with the statement that their patients consider the physician's CME participation important to their care, but over half indicated that they agreed hardly at all with the statement.

Table 3

Attitudes Toward Formal CME

Statement	Agree to a Large Extent (Percent)	Agree to Some Extent (Percent)	Agree Hardly at All (Percent)
Formal CME has made a difference in my practice habits.	19	50	31
I believe I could keep up to date professionally without formal CME programs.	43	33	24
My patients see my participation in formal CME as important to their care.	10	29	61

In analyzing the relationship between responses regarding the difference CME makes in a physician's practice and all seven of the attitude questions shown in Table 2, it was found that the greater the difference a physician believes CME makes in his/her practice, the more likely the physician is to favor mandatory CME. Another significant relationship was found between those indicating that they could keep up to date professionally without formal CME and all attitude questions except the one concerning mandatory CME for Pennsylvania Medical Society membership. Those who agreed with the statement that they could keep up to date without formal CME were less likely to support mandatory CME. A physician's area of specialty did not relate significantly to his/her

attitudes toward mandatory CME, except that family practitioners indicated support for mandatory CME for specialty society membership. Persons over age sixty were less receptive to mandatory CME than were their younger colleagues.

Needs and Perceptions of CME

Respondents were asked to rate thirteen CME activities on a four point scale according to how useful each has been for them as a technique for keeping up to date. The results of this rating are shown in Table 4.

Journal reading was considered by far the most useful CME activity, followed by teaching hospital conferences and textbook reading. Respondents used mini-residencies very little, and they indicated that clinical tutorials, correspondence courses, and telephone conversations were rarely useful.

Table 4

Usefulness of CME Activities

Activity	Very Useful (Percent)	Sometimes Useful (Percent)	Rarely Useful (Percent)	Haven't Used (Percent)
Journal reading	64	32	4	0
Teaching hospital conferences	46	32	6	16
Teaching	40	24	8	28
Textbook reading	29	51	14	6
Community (non-teaching) hospital conferences	27	32	16	25
Audio-cassette tapes	25	27	25	23
"Resort" programs	17	33	11	39
Correspondence courses	12	16	11	61
Clinical tutorials	11	17	5	67
Contacts with drug company representatives	7	45	39	9
Telephone conversations	7	23	22	48
Mini-residencies	4	4	3	89

A significant relationship was found between some attitudes toward CME (Table 2) and the perceived usefulness of journal reading. Physicians who believed that formal CME has made a difference in their practice were less likely to favor journal reading, while physicians who felt that CME made little difference reported that journal reading was useful to them. Similarly, those who indicated that they could keep up

to date without formal CME also indicated that they found both journals and textbook reading quite useful, while those who did not believe they could keep up to date without formal CME saw these activities as less useful.

In comparing physicians' ratings of the activities shown in Table 4 to their areas of specialization, it was found that the majority of practitioners in all specialities surveyed, except family practice, found journal reading very useful. Textbook reading was reported to be less useful by general and family practitioners than by others; three fourths of those who rated textbook reading rarely useful or not used were general and family practitioners.

Again with the exception of family practitioners, more than half the respondents in each specialty group had not used correspondence courses to keep up to date. Among family practitioners, however, half the respondents indicated that correspondence courses were either very useful or sometimes useful.

Teaching was not considered useful as an updating tool for general practitioners, but physicians practicing internal medicine and obstetrics/gynecology found it to be a useful CME activity. While clinical tutorials were not used by most respondents, general practitioners found this activity very useful. Forty-four percent of those who found contacts with drug company representatives very useful were general practitioners.

Younger physicians found journal reading and teaching useful to them, but reported that they either did not use audio-visual programs or did not find them useful. Older doctors found audio-visual programs, hospital conferences, and contacts with drug company representatives useful.

In responding to a question concerning their perceptions of the effectiveness of seven types of CME presentations, physicians who indicated that they could keep up to date without CME said that they considered audio-visual self instructional aids very effective. The majority of respondents in every specialty group considered lectures very effective and computer assisted instruction hardly at all effective. Panels were cited as being considered particularly effective for practitioners of internal medicine, but only somewhat effective for those in other specialties. At least half of the respondents in each age category rated lectures as a very effective type of presentation.

Respondents were asked to indicate whether they believed they had great, moderate, or hardly any need for up to date information on each of sixteen medical or related topics. As shown in Table 5, the greatest needs indicated were for information on the cardiovascular and endocrine systems, while physicians felt the least need for information on research and teaching skills. Some relationships emerged between physicians' areas of specialization and age and their perceived needs. General and/or family practitioners indicated needs for information on the musculo-skeletal systems; skin; nervous system; cardiovascular system; ear, nose, and throat; and gastro-intestinal system.

Table 5

Perceived Need for Information on
Selected Topics

Topic	Have Great Need (Percent)	Have Moderate Need (Percent)	Have Hardly Any Need (Percent)
Cardiovascular system	44	44	12
Endocrine system	39	52	9
Nervous system	32	54	14
Hemopoietic system	31	58	11
Skin	29	51	20
Renal-urinary system	27	61	12
Female reproductive system	25	43	32
Musculo-skeletal system	25	52	23
Gastro-intestinal system	24	61	15
Ears, nose, and throat	21	50	29
Mental health	19	53	28
Practice management	18	33	49
Male reproductive system	15	46	39
Patient education	14	43	43
Research	14	26	60
Teaching skills	13	33	54

Pediatricians also felt they needed up to date information on several of these topics. Physicians practicing obstetrics/gynecology showed a significant need only for information on the female reproductive system. Physicians over age sixty indicated a greater need for information on skin and the cardiovascular system than did their younger counterparts.

Preferences for Delivery of CME Programs

Table 6 shows physicians' responses to a question regarding major obstacles to their formal CME participation. Time away from practice was cited most frequently as a major obstacle to participation in CME programs. Factors specified under "other" obstacles included observations that "high quality programs are unusual," programs often fall on the "wrong" days, and the subject matter being offered is not what is wanted.

When asked for their preferences regarding CME program length, 25 percent of the physicians indicated that two hour programs were preferable, while 24 percent preferred programs lasting two or three days. One day and half day programs were slightly less popular, with 21 and 20 percent (respectively) of respondents selecting these program lengths. Only 10 percent of the physicians surveyed expressed a preference for week long programs.

In selecting the day(s) of the week when they would like to attend CME programs, respondents indicated that Wednesday was the day most frequently preferred, followed by Thursday, Saturday, Sunday, Friday, Tuesday, and Monday, in that order.

Table 6

Major Obstacles to Formal CME Participation

Factor	* Percent Considering Factor an Obstacle
Program costs	48
Time away from practice	75
Availability in your locality	42
Other	18

*Respondents were instructed to indicate all factors they considered obstacles to formal CME participation.

A strong preference was indicated for programs lasting two or more days to be held on weekends, with late-week days, mid-week, and beginning of week following in that order. Fall was shown to be the preferred time of year for attending CME programs, followed by spring, winter, and summer.

Table 7 shows physicians' responses to questions regarding how far they are willing to travel for a CME program. For one day programs, three fourths of the respondents were willing to travel no more than fifty miles. However, for programs of two or more days, almost two thirds of the physicians surveyed were willing to travel 200 miles or more, and a large number of them were willing to travel out of state.

Table 7

Greatest Distances Willing to Travel for CME Programs

Greatest Distance Respondent is Willing to Travel	For One Day Program: Percent of Respondents	For Program of Two or More Days: Percent of Respondents
50 Miles	73	12
100 Miles	20	24
200 Miles	2	16
Anywhere in State	3	8
Out of State	2	40

When asked their feelings about taking a one to three month sabbatical from their practice for a concentrated study of a subject of interest to them, 53 percent of the respondents indicated that they were somewhat interested but indicated doubt that they could arrange it. Thirty-four percent were not interested, 8 percent were very interested, and 4 percent were interested and felt they could arrange to do this.

Physicians reported that brochures were most influential information sources in their selection of CME programs, followed by society membership and colleagues. JAMA/AOA supplements and journal advertising were considered somewhat less influential.

Sixty-eight percent of the respondents indicated that they require a minimum of only four weeks' advance notice to attend a one day program, while 25 percent need eight weeks' notice. For programs lasting two or more days, 49 percent of the physicians responding require eight weeks advance notice, while 30 percent need three months or more to prepare.

DISCUSSION

Attitudes toward CME

In keeping with the trend indicated by two nationwide studies, the physicians sampled in this study indicated that mandatory CME is gaining acceptance. Significant numbers of Pennsylvania physicians appear willing to accept the current CME requirement for Pennsylvania Medical Society membership (59 percent) as well as the notion of mandatory CME for specialty society membership (50 percent), hospital staff privileges (46 percent), and relicensure (45 percent). There is more resistance to mandatory CME only for national association membership or malpractice insurance.

Generally family practitioners seem more favorable than other specialists toward mandatory CME, perhaps because they have had a longer history of involvement with CME for specialty recertification. The American Board of Family Practice was the first specialty board to require mandatory recertification, a requirement they established in 1969.

This study found a significant relationship between the perceived effectiveness of mandatory CME and attitudes toward it. The physician who perceives formal CME to make a difference in his/her practice habits is more likely to favor mandatory CME. Conversely, the physician who feels he/she could keep up to date without formal CME is less likely to approve of a mandatory requirement. A majority of the physicians in this sample believed that formal CME had made a difference in their

practice, and they appeared to view mandatory CME with acceptance. The situation in Pennsylvania seems to reflect the state of affairs for CME nationwide: at the same time that CME's effectiveness is being seriously challenged by its critics, its acceptance is spreading. Certainly the notion of CME in some form is accepted among physicians. In this survey, a substantial 83 percent of the respondents asserted that they would continue to participate in CME at their current level, whether it was required or not.

Formal CME Preferences

Medical educators have repeatedly recommended a move away from traditional CME on the grounds that its effectiveness has not been successfully demonstrated. Traditional CME is typically characterized as knowledge transfer, from teacher to physician-learner, usually through lectures on topics selected by program developers. As an alternative to this format, educational models involving the learner actively in all aspects of his/her education, including individualized instruction or intensified workshops, have been proposed.

Despite researchers' recommendations that CME move away from traditional delivery formats, this survey shows a preference among Pennsylvania's physicians for the traditional lecture format, and this preference holds true across all age groups and specialities. Among seven types of program presentations, physicians indicated that they consider lectures with minimal participation most effective. Judged least effective were the two individualized approaches, computer-assisted instruction and audio-visual self-instructional aids.

One explanation of this finding is that physicians, whose time for CME is scarce, want to learn as much as possible during the allotted program time and believe that a lecture best facilitates knowledge transfer. Of the four methods they perceived to be most effective, three involve a presentation by some sort of "expert."

If this explanation accounts for the popularity of lectures, then the respondents may be judging CME effectiveness by the perceived amount of information transferred. However, knowledge is not necessarily translated into improved patient care. Physicians' perception that lectures are effective may not contradict the belief that lectures are an ineffective process for bringing about improved competence.

This real discrepancy between what educational research is saying ought to be true and what users are revealing is true for them has also been identified in other surveys. For example, surveys done in Kansas (DeNio, 1976), New Zealand (West, 1976), and Scotland (cited in Scott, 1978), in which physicians were asked to specify their preferred method of CME, also show a preference for the lecture format. Among community mental health professionals in Berkeley, California who have been exposed to a variety of innovative approaches (including role playing, self-directed learning, and videotapes), traditional training methods, especially lectures by outside speakers, also were considered most helpful (Estes, 1975).

Another explanation for the popularity of lectures might be that physicians are simply more comfortable with them, since most education

from elementary school on is passive learning with an emphasis on information transfer. This opinion is put forth by Richards, whose explanation of the popularity of traditional methods such as lectures is that "activities are rejected if they fall outside the range of traditional school experiences, because individuals have not learned how to learn" (Richards, 1978c, p. 176).

Informal CME Preferences

In addition to formal CME programs, physicians also participate in less structured CME activities. According to this study, those rated most useful for keeping up to date are journal and textbook reading, teaching, audio cassette tapes, and contacts with drug company representatives. Richards suggests that such forms of informal learning may be more successful in providing information which leads to actual behavior changes than more formal techniques, which might merely inform (Richards, 1978c). He cites a study which found that the majority of physicians were acquiring their information through pharmaceutical detailmen, drug sample literature, journals, consultations with colleagues, and professional meetings, rather than through formal CME.

Richards concludes that these forms of participative learning are the most effective ways to influence physician behavior. Whether or not this conclusion can be empirically tested and substantiated, segments of Pennsylvania's physician population believe that these sorts of informal, unstructured CME activities are quite useful in keeping up to date.

Learner Identified Needs

CME planners can anticipate better program attendance as well as more effective programs if they know the perceived learning needs of their audiences and accommodate these perceived needs in their programming plans. In this study, respondents indicated their degree of perceived need for sixteen topics. They believed that some need exists for each of the topics. However, physicians are less concerned about up to date information on managerial or professional skills than about information on body systems. Perceived needs were least for practice management, teaching skills, patient education, and research, perhaps because physicians have not been exposed to these educational sources.

Perceived needs varied from one specialty to another. Generally those engaged in the practice of obstetrics/gynecology expressed less need for information on these topics than the other specialties did, possibly because of the more limited scope of patient problems in that specialty. Physicians in general practice, family practice, and pediatrics demonstrated considerably more need for up to date information in all of the content areas listed. This finding is consistent with the broader scope of problems encountered by these physicians in their daily practice.

CME Marketing Information

The marketing information which emerged from this survey emphasizes that Pennsylvania's primary care physicians' biggest problem in

obtaining CME is that it demands more time away from their practices than they feel they can afford. Three fourths of the sample identified "time away from practice" as a major obstacle to CME participation, while direct costs and availability were each identified as major obstacles by under half of the sample. Seventy-two percent of those surveyed were within ten miles of a hospital offering CME programs, so convenience is not a problem.

The data give several indications that time away is a major concern. Wednesday, a traditional doctor's day off, was shown to be the preferred day of the week for CME programs. The most popular days for a program lasting two or more days were Saturday and Sunday, selected by 68 percent of the sample. Even in considering a sabbatical, a majority of the physicians sampled cited difficulty in making arrangements for their practice as the major obstacle to taking the sabbatical, despite their perceived need to do so.

CME surveys in other states have identified the same overriding concern. In a survey of 150 members of the Iowa Medical Society, physicians identified "insufficient time due to patient care load" as a major obstacle twice as many times as any other choice (Caplan and Yarcheski, 1974). A West Virginia State Medical Association Survey found that the obstacle to CME cited most often was "time away from my practice" (Smith, 1978), and respondents requested more weekend meetings. This same finding, that time away from practice is the major concern of physicians, emerged from studies in Utah (Castle and Storey, 1968) and Kansas (DeNio, Neth, and Rising, 1976).

Travel time to CME programs is a substantial factor in Pennsylvania physicians' decisions to participate in CME programs. While 60 percent of the physicians sampled would travel anywhere in Pennsylvania for a program of two or more days, three fourths of them set a limit of fifty miles for a one day program. In Caplan and Yarcheski's study, Iowa physicians ranked travel time fourth in a list of deterrents to their CME participation.

The findings of this study indicate that, for Pennsylvania's primary care physicians, CME programs should be short (two thirds of all respondents prefer programs lasting one day or less), close to home, and on days when the physicians are not normally working. Recreation and entertainment facilities are only moderately important factors. Availability and direct costs, while not to be ignored, do not seem to be as troublesome to physicians as arranging time away.

The challenge is the CME planner's. Pennsylvania's physicians have acknowledged their willingness to participate in CME, yet they are dubious of its effectiveness in improving their competence or patient care. Using the marketing information provided by this study, planners can involve physician-learners in the design and implementation of relevant CME programs.

IMPLICATIONS FOR CME PROGRAM DEVELOPMENT

The results of this survey were viewed very positively by the Hershey Continuing Education Department. They confirmed the belief that past efforts of the department have not been in vain, and new ideas gained from the survey are cause for continued optimism about CME program planning and development for the future. The 26 percent survey response rate alone is a testimony to the fact that Pennsylvania's primary care physician population is concerned with the type and availability of CME activities and that they are interested in having some input into the planning and development process.

Continuing education staff members at Hershey were encouraged to learn that the majority of the physicians surveyed agree with the concept of CME as a necessary component of their practice, even to the point of accepting mandatory CME. Their affirmation of the value of CME participation with or without requirement indicates the existence of an interested and receptive target audience.

The Hershey Continuing Education Department now has a documented list of physicians' perceived educational priorities. This list can be used in academic planning meetings and will serve as a resource base for academic department chairmen's use in making departmental commitments to continuing education. Specifically, continuing education staff members can begin by developing programs to address the cardiovascular and the endocrine body systems, areas in which physicians indicated high perceived needs for additional information.

The Hershey Continuing Education Department intends to use sample groups from this study to further test some of the findings of the survey. Respondents included in this group will receive information on the proposed cardiovascular program and their response rate will be noted. An enclosure indicating that this program was developed as a result of their survey response will be included with the brochure, and survey respondents will be asked to indicate the major factors contributing to their decision to attend or not attend.

Involvement of the Hershey Continuing Education staff members in the development of the questionnaire for this survey has had the secondary benefit of enabling them to gain some familiarity with the questionnaire development process. They expect this information to prove useful to them in improving the quality of their individual program evaluation forms, so that they can obtain more useful and accurate feedback from CME program participants. Conducting these more informal evaluations should enable them to keep abreast of physicians' perceived educational needs and attitudes toward CME without having to conduct regular formal surveys such as the one just completed. The information gleaned from the survey regarding marketing and delivery systems will enable the Hershey Continuing Education Department to conduct further planning with the assumption that lecture presentations are in fact the most readily acceptable form of CME activity. They expect to strengthen their efforts to have direct mail promotional materials to physician-learners five to eight weeks in advance of one-day programs, and sooner for programs lasting two or more days. Their mailings to defined geographic areas will be tailored appropriately for

the programs of different lengths.

A significant change in Hershey's programming as a result of this survey will be an increased effort to hold CME programs on weekends. Two qualifying factors must be taken into consideration, however: (1) will program speakers, who are usually academic persons, accept this change in procedure and agree to weekend participation, and, (2) even though the survey results clearly indicate a preference for weekend CME activities, are there other influential factors beyond those of time away from practice and related cost factors which will affect weekend participation?

This study has given reinforcement to many current programming practices followed by the Hershey Continuing Education Department, and has suggested possibilities for improving CME services to Pennsylvania's primary care physicians. Beyond this, findings of the study lend themselves to application by other providers of CME both within Pennsylvania and in other states. At the very least, the study raises some questions that these providers may wish to address and to explore further in relation to their clientele groups.

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Appendix

CONTINUING MEDICAL EDUCATION SURVEY

Pennsylvania Medical Society
The Pennsylvania State University College of Medicine

DIRECTIONS: Please circle the appropriate answer(s) to each of the questions below.

1. Which of the following reflect(s) your attitude toward mandatory Continuing Medical Education (CME)? (Circle all that apply.)
   a. CME should continue to be a requirement for Pennsylvania Medical Society membership.
   b. CME should be required for national association memberships.
   c. CME should be required for specialty society membership.
   d. CME should be required for relicensure in Pennsylvania.
   e. CME should be required for malpractice insurance.
   f. CME should be required for appointment to a hospital medical staff.
   g. CME should not be required.
2. If CME were not mandatory, would you still participate in CME activities?
   a. definitely, at about the same level
   b. possibly, but at a reduced level
   c. probably not, or at a very low level
3. Which of the following procedures are acceptable to you for assuring a minimal level of knowledge? (Circle all that apply.)
   a. certification by specialty society
   b. recertification by specialty society
   c. peer review (e.g., audit)
   d. relicensure by examination
   e. relicensure for which CME is required
   f. none of these
4. To what degree is each of the statements below true for you?

	To a Large Extent	To Some Extent	Hardly at All
a. Formal CME has made a difference in my practice habits.	1	2	3
b. I believe I could keep up-to-date professionally without formal CME programs.	1	2	3
c. My patients see my participation in formal CME as important to their care.	1	2	3

5. Listed below are a variety of CME activities. Please rate each activity according to how useful it has been for you as a technique for keeping up-to-date, and indicate the average number of hours per month you spend on each activity.

	Very Useful	Sometimes Useful	Rarely Useful	Haven't Used	Average Hours Per Month
a. journal reading	1	2	3	4	_____
b. textbook reading	1	2	3	4	_____
c. audio-cassette tapes	1	2	3	4	_____
d. audio-visual programs	1	2	3	4	_____
e. correspondence courses	1	2	3	4	_____
f. teaching	1	2	3	4	_____
g. telephone conversations	1	2	3	4	_____
h. clinical tutorials	1	2	3	4	_____
i. mini-residencies	1	2	3	4	_____
j. community (non-teaching) hospital conferences	1	2	3	4	_____
k. teaching hospital conferences	1	2	3	4	_____
l. "resort" programs	1	2	3	4	_____
m. contacts with drug company representatives	1	2	3	4	_____

6. How effective are each of the following types of presentation for you?

	Very Effective	Somewhat Effective	Hardly at All Effective
a. lectures (minimal participation)	1	2	3
b. panel discussions	1	2	3
c. small group workshops	1	2	3
d. skill sessions	1	2	3
e. "ask the experts" (informal discussions with consultants)	1	2	3
f. computer-assisted instruction	1	2	3
g. audio-visual self-instructional aids	1	2	3

7. How great is your need for up-to-date information on each topic below?

	Great Need	Moderate Need	Hardly Any Need
a. Musculo-skeletal system	1	2	3
b. Skin	1	2	3
c. Nervous system	1	2	3
d. Cardiovascular system	1	2	3
e. Renal-urinary system	1	2	3
f. Male reproductive system	1	2	3
g. Female reproductive system	1	2	3
h. Ears, nose and throat	1	2	3
i. Gastro-intestinal system	1	2	3
j. Mental health	1	2	3
k. Practice management	1	2	3
l. Teaching skills	1	2	3
m. Patient education	1	2	3
n. Research	1	2	3
o. Endocrine system	1	2	3
p. Hemopoietic system	1	2	3

8. How influential are the following in your selection of CME programs?

	Very Influential	Somewhat Influential	Hardly At All Influential
a. brochures	1	2	3
b. JAMA/AOA supplements	1	2	3
c. journal advertising	1	2	3
d. society membership	1	2	3
e. colleagues	1	2	3
f. other (specify) _____	1	2	3

9. Specify the minimal amount of advance notice you require in planning to attend a CME program

lasting one day	lasting two or more days
a. 4 weeks	a. 4 weeks
b. 8 weeks	b. 8 weeks
c. 3 months or longer	c. 3 months or longer

10. Which, if any, of the following are major obstacles to your participation in formal CME? (Circle all that apply.)
    a. program costs
    b. time away from practice
    c. availability in your locality
    d. other (specify) _____

11. Considering costs, time away, and travel, would you prefer most CME programs to be:
    a. two-hour programs, scheduled frequently, in your location
    b. half-day programs
    c. one-day programs
    d. programs lasting 2 or 3 days
    e. week-long programs

12. Select the day(s) of the week during which you would most prefer to attend a CME program. (Circle all of your preferences.)

lasting one day	lasting two or more days
a. Monday	a. beginning of week (Mon.-Tues.)
b. Tuesday	b. mid-week (Wed.-Fri.)
c. Wednesday	c. late in week (Thurs.-Sat.)
d. Thursday	d. week-end only (Sat.-Sun.)
e. Friday	
f. Saturday	
g. Sunday	

13. When is the best time of year for you to attend extended CME programs?

a. summer c. winter
b. fall d. spring

14. How far would you be willing to travel for a

one-day program?	program of two or more days?
a. 50 miles	a. 50 miles
b. 100 miles	b. 100 miles
c. 200 miles	c. 200 miles
d. anywhere in state	d. anywhere in state
e. out of state	e. out of state

15. How influential are each of the following types of locations in your selection of CME programs?

	Very Influential	Somewhat Influential	Hardly at All Influential
a. program located in a 'tourist' city (e.g., Boston, San Francisco)	1	2	3
b. program located in a non-city tourist location (e.g. Amish country)	1	2	3
c. program not in a 'tourist' location but offering recreational and/or entertainment facilities at or near the site (e.g., swimming, tennis, night clubs)	1	2	3
d. program located at a resort featuring a sport of your choice (e.g., ski resort, boating)	1	2	3

16. There are a number of factors that can influence your decision to attend a CME program. Five of these factors are listed below. Please rank them in order of importance to you, with 1 indicating the most important and 5 the least important.

speaker _____
topic _____
location _____
time of year _____
cost _____

17. Which of the following best reflects your feelings about taking a one-to-three month sabbatical from your practice to do concentrated study of a subject of interest to you?
    a. Very interested — I would like to do this in the next year.
    b. Interested — I need to do this and could arrange to do so.
    c. Somewhat interested — I need to do this but doubt that it could be arranged.
    d. Not interested — I don't need such concentrated study.

18. Do you belong to a local, state, and/or national medical society? Yes No

19. Do you belong to a specialty society? Yes No

20. Is your practice a group (two or more) practice? Yes No

21. Is your practice located in
    a. an urban area
    b. a suburban area
    c. a small town
    d. a rural area

22. Do you have a hospital appointment (staff privileges)? Yes No

23. How far from your practice is the main hospital at which you might attend CME activities?
    a. 0-10 miles
    b. 11-25 miles
    c. 26-50 miles
    d. 51-75 miles
    e. 76-100 miles
    f. over 100 miles

24. Does this hospital regularly offer CME activities? Yes No

25. Does this hospital have a library which meets your needs? Yes No

26. Is this hospital a
    a. secondary hospital
    b. tertiary hospital (University)

(Answer 27-28 only if you have attended CME activities in the Hershey area in the past year.)

27. For each location where CME activities took place, indicate whether or not your educational and recreational experiences were satisfactory.

	Satisfactory Educational Experience?		Satisfactory Recreational Facilities?	
a. Milton S. Hershey Medical Center	Yes	No	Yes	No
b. Hershey Motor Lodge	Yes	No	Yes	No
c. Hotel Hershey	Yes	No	Yes	No
d. Other _____ (specify)	Yes	No	Yes	No

28. Were these programs in the Hershey area:
    a. accurately described in the advertising? Yes No
    b. too general in academic content for your needs? Yes No
    c. too specific in academic content for your needs? Yes No
    d. taught by capable, knowledgeable speakers? Yes No

29. Which is your specialty?
    a. General Practice
    b. Family Practice
    c. OB-GYN
    d. Internal Medicine
    e. Pediatrics
    f. Other (specify) _____

30. Are you currently certified in this specialty?
    a. Yes
    b. No

31. Which degree do you hold?
    a. M.D.
    b. D.O.

32. Please indicate your age:
    a. 21-30
    b. 31-40
    c. 41-50
    d. 51-60
    e. over 60

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